

Docket No.: 278727US2PCT/mca

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Toshihisa TOMIE

SERIAL NUMBER: 10/550,413

GROUP: 2881

FILED: July 18, 2006

EXAMINER: SAHU, MEENAKSHI S.

FOR: METHOD AND APPARATUS FOR GENERATING LASER PRODUCED PLASMA

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

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SIR:

Applicant acknowledges with appreciation the indication of allowability of the claimed invention. In response to the Examiner's Statement of Reasons for Allowance in the Notice of Allowance of May 15, 2009, Applicant respectfully submits the following comments.

In the Examiner's Statement of Reasons for Allowance on pages 2 and 3 of the Notice of Allowance, paragraph 4 states:

The following is an examiner's statement of reasons for allowance:

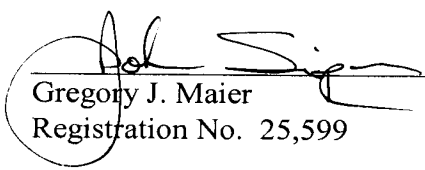
Regarding claims 1, 17, 18 and 34, prior art fails to disclose or make obvious, a method or apparatus for generating a plasma (as a source of radiation) by irradiating a pulsed laser on a material and fine particles are generated by irradiation of a short pulse on a material and under an air flow (and is different from particles mixed in a liquid). Prior to irradiation by the main laser, droplets are heated by a weak laser or infrared rays and vaporized to form a "particle-cluster" which is a type of secondary particle that is formed by a large number of fine particles which have sub-micron diameter and are bound together by a binder that vaporizes at a temperature lower than the melting point of the fine particles. Since the solvent of the droplet is vaporized, the diameter of the droplet reduces while the density of particles is increased. Hence the main laser can

heat the particles to generate the plasma without being blocked by the solvent (a large fraction of the droplet is the solvent) and the plasma generation becomes more efficient. Further, particles in the particle-cluster can be dispersed by giving then a shock prior to irradiation by the main laser, so that the particles are dispersed uniformly into a wide space. Since the solvent is vaporized prior to entering the vacuum chamber for plasma production, this method avoids degradation of the vacuum and also prevents contamination of the vacuum chamber.

It is respectfully noted that independent Claims 1, 17, 18 and 34 do not include this language. For example, these claims do not include a reference to "fine particles which have sub-micron diameter and are bound together by a binder that vaporizes at a temperature lower than the melting point of the fine particles" or to the last four sentences of the above statement. Claims 1 and 18 also do not include a reference to "fine particles are generated by irradiation of a short pulse on a material and under an air flow (and is different from particles mixed in a liquid)". Claims 17 and 34 also do not include a reference to "droplets are heated by a weak laser or infrared rays and vaporized to form a "particle-cluster" which is a type of secondary particle that is formed by a large number of fine particles". Accordingly, it is respectfully submitted that the above-quoted statement does not apply to Claims 1, 17, 18 and 34 to the extent the language used in the statement differs from the language of the claims.

Respectfully Submitted,

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